In 2007, Dr. Nancy Rogge arrived at a crossroads in her career. The veterinary medical clinic where she worked was being sold; she had 10 days to secure another job or establish her own clinic in Madison, Wis.

She opted for the latter. To keep business overhead low, the Class of 1991 alumna opened a solo, house-call-only practice named Community Critters. Her mobile business became a success, but the long hours spent in a car took a toll on the 365-day-per-year biker.

“I went from commuting to work on my bicycle everyday to spending all my time in the car,” says Rogge. “The idea for a bicycle mobile clinic was organic. I started it because it made me happy and saved time getting around the city.”

With a $100 plastic box from Farm and Fleet, Dr. Nancy Rogge converted a used Burley bicycle trailer into a mobile clinic that serves clients in the Madison, Wis. area. A Class of 1991 alumna, Rogge created the first bicycle-based veterinary medical clinic in the United States.

Rogge provides physical examinations, vaccinations, behavioral consults, and diagnostic laboratory testing, aiding mostly dogs and cats. She also conducts surgical procedures in a rented suite at a local veterinary medical clinic.

Her small practice scope allows Rogge to have a much closer relationship with her clients, and meeting animals in their own environment offers them the many benefits of comfort.

“Her level of care has always been extraordinary,” says Jesse Lindner, a 15-year client of Rogge. “The bicycle mobile clinic makes it easier on our animals and us to have her come to our...
Graduate Program Earns Top Marks

The school’s Comparative Biomedical Sciences (CBMS) graduate program ranked in the top 10 for the veterinary medical sciences discipline in the 2012 rankings from the Academic Analytics Database (AAD). The AAD benchmarks scholarly research accomplishments, and the CBMS program was one of six at the University of Wisconsin–Madison to receive the top 10 ranking among its peers.

Academic Analytics gathers and aggregates metrics on the research productivity of nearly 400 institutions into a comparative database. The database compiles the information in categories such as grant dollars earned, number of books or articles published by faculty, and number of faculty with awards or honors. The goal is to provide clear, unbiased information that each graduate program can use for easy comparison at a discipline-by-discipline level as well as overall university performance.

Sloth Research Energizes Recent Grad, Professor

When Susan Blunck started her second year of veterinary medical school, she immediately began looking for a project that would take her on an international adventure the following summer. She scouted dozens of research programs involving various universities around the globe.

But she found the beginning of her quest right here at the UW School of Veterinary Medicine (SVM), and it would lead her on a three-year academic journey to study sloths in remote regions of Costa Rica.

Blunck, who graduated in May from the doctor of veterinary medicine program, is driven by a passion for toxicology and international research. She studied the effects of pesticide and heavy metal exposure on wolves during her undergraduate years, and at the SVM, she found the perfect research match in Dr. Kurt Sladky.

A clinical associate professor of zoological medicine in the Department of Surgical Sciences, Sladky engages Blunck in a cross-university, collaborative research endeavor studying sloths living on the FINMAC organic cacao plantation in the north-central region of Costa Rica. Along with many other UW–Madison researchers, Sladky’s involvement with the sloth research program spans nearly a decade.

With assistance from Sladky and various travel grants, Blunck spent 10 days in August 2012 collecting blood samples from 31 two-toed and three-toed sloths. She worked alongside then UW biochemist Fariba Assadi-Porter to collect data for a metabolomics study that evaluates how sloths

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New Clinical Skills Training Center Offers Students Space to Perfect Skills

The morning before conducting her first live surgery, third-year student Joy Parker spends several hours with an artificial dog leg. She uses it to review suturing and bandaging techniques, and then she practices her suture patterns using various fabrics on practice boards. This individualized practice session allows her to rehearse vital skills that she will use later in the day during a live spay procedure, a critical part of her surgery course.

Thanks to the new Clinical Skills Training Center (CSTC) at the UW School of Veterinary Medicine, students like Parker now have a dedicated instructional room filled with dozens of interactive models, equipment, and simulators where students can learn, practice, and refine basic clinical skills.

Opened in the fall of 2013, the mission of the new space is to enhance the development of basic and advanced clinical skills beyond what is provided in the current curriculum.

“Clinical experiences are random by nature,” says Dr. Robb Hardie, clinical associate professor of small animal surgery and associate dean for professional programs. “During a clinical rotation, students could leave without seeing everything that is vital to that rotation. We couldn’t guarantee they observed and practiced every vital skill until now.”

The laboratory is open to all students, faculty, residents, and interns, and is staffed by a certified veterinary technician dedicated to teaching students about the equipment and its proper uses. The goal is to offer 24-hour access and be fully integrated into the doctor of veterinary medicine curriculum over the next several years. To date, the Small Animal Surgery lab and Fundamentals of Surgery courses have CSTC experience built into the curriculum.

Prior to the CSTC, students sometimes missed opportunities to practice certain clinical skills because of curriculum constraints or limited access to equipment. Now, students have access to essential equipment and demonstration models in a low-stress, flexible, and convenient environment.

“The idea is to offer a pressure-free experience for our students,” explains certified veterinary technician Kristen Cooley, the CSTC instructional specialist. “Students can test out equipment and procedures, ask questions, and get a better understanding of how things work before or after seeing it in a live clinical setting. It is a safe place to come and learn without the stress that sometimes accompanies being in the clinical environment.”

The lab offers a variety of models and equipment, including an anesthesia machine, intubation models, IV blood collection models, a laparoscopic surgery trainer, urinary catheter models, and an endoscope, a device with a light attached that is used to look inside a body cavity or organ. A full-sized plush dog model is available for practicing bandaging and proper restraint.

Additionally, Cooley uses commonplace materials and craft store finds like wooden dowels, faux fur, and rubber tubing to build models that instructors need for demonstrating and practicing essential skills. Manufactured models are available for students to practice suturing and tissue handling.

“I was able to work with Kristen on placing IV catheters and endotracheal tubes on dogs and cats,” says third-year student Cynthia Wise. “I really enjoyed having a skilled teacher who was able to sit down and coach me on best approaches and techniques. It has been an invaluable resource.”

Additionally, the CSTC houses computers where students can watch newly developed core competency-based learning modules created by faculty and staff at the UW School of Veterinary Medicine. Launched this spring, the “blended learning” modules expose students to rare cases or other types of cases they did not have the opportunity to experience while on clinical rotations. The comprehensive training in core competencies provides students with the skills they are expected to know as new graduates.

“There is a growing interest in competency-based learning,” says Hardie. “We are ahead of the curve in creating a dedicated space for developing essential veterinary medical skills that students will use in their future practices.”

We Heard You…

Thank you to all who responded to the online survey about the school’s communications. We very much value your feedback and look forward to using what you shared with us.

In the meantime, we’d like to respond to a common request for a digital version of On Call, On Call is and has been available online in .pdf format. New issues are posted on our website at www.vetmed.wisc.edu/oncall around the same time that we publish the print version. We know some of you would like to receive the digital version in place of the printed copy, and we hope to be able to offer this in the future. At this time we do not have the technology to reliably honor those preferences in a cost neutral way. We will continue to work with our campus partners toward this goal.

Again, thank you again for sharing your opinions. If you weren’t able to complete the survey but want to share your thoughts about our communications, you can email us at oncall@vetmed.wisc.edu.
New Faculty

Salih Eminaga, DVM, has joined the Department of Medical Sciences as a clinical instructor in neurology and neurosurgery. Eminaga earned his veterinary medical degree from Ankara University in Turkey where he worked two years as a surgery research assistant. After he became a member of Royal College of Veterinary Surgeons (MRCVS) by examination, he worked in various small animal practices in England for four years. During that time, he earned a general practitioner certificate in small animal surgery. Most recently, he completed a residency in neurology and neurosurgery at a multidisciplinary private referral hospital. His clinical interests include surgical treatment options for Chiari-like malformation and syringomyelia, treatment of brain tumors, and management of traumatic brain injuries and inflammatory central nervous system diseases.

Tatiana Ferreira, DVM, MSc, PhD, has joined the Department of Surgical Sciences as a clinical instructor in anesthesiology. She earned her veterinary medical degree from the Fluminense Federal University and completed a small animal internship in private practice, both located in Rio de Janeiro, Brazil. She obtained master’s and doctoral degrees at Sao Paulo State University, Brazil, and completed an anesthesia residency at the University of California, Davis. Her clinical interests include anesthesia and pain management of small, large, and exotic animals.

Jackie Williams, DVM, MS, has joined the Department of Surgical Sciences as a clinical assistant professor of radiology and diagnostic imaging. Williams completed her master’s degree in materials science and engineering from the University of Virginia. Later, she earned her veterinary medical degree from Virginia–Maryland Regional College of Veterinary Medicine. After graduation, she completed a small animal rotating internship and a residency in diagnostic imaging. Williams’ research interests are computed tomography applied to trauma and respiratory disease, imaging of the feline biliary tract, and dental radiography.

Universidade Federal de Minas Gerais in Brazil and then worked as a general practitioner in a small animal referral private practice in Brazil. She completed a diagnostic imaging internship at Louisiana State University and another at the University of Illinois combined with a master’s degree program using computed tomography in awake cats. After earning her master’s degree, she participated in a diagnostic imaging residency at the UW School of Veterinary Medicine. Her clinical interests include cross-sectional imaging of small animals and contrast-enhanced ultrasound.

Terri Ollivett, DVM, DACVIM, has joined the Department of Medical Sciences as an assistant professor in food animal production medicine. Ollivett earned her veterinary medical degree from Cornell University. After graduation, she worked as a large animal veterinarian in New York before completing a three-year large animal internal medicine residency at Cornell University. Most recently, she earned her doctorate in epidemiology at the University of Guelph in Canada. Ollivett’s research interests focus on dairy cattle health and management.

Building on Research Experiences

In March, Sladky and Blunck returned to Costa Rica to collect additional blood samples to see if pesticides can be found in the sloths. Though they reside on an organic farm, the large banana plantations that surround it apply pesticides heavily. According to Sladky, sloths are a sentinel species, one whose presence, absence, or relative well-being in a given environment demonstrates the health of its ecosystem as a whole. The findings could potentially have a major impact on the people and other animals living in that community.

However, collecting blood samples from sloths presents several challenges in an international setting. Language and cultural barriers mean extra communication is required. “We’re working with an endangered species that is extremely important to the people in the area as well as other scientists,” says Sladky. “We wanted to offer the safest and least invasive methods to collect data from the sloths.”

Researchers spent significant time educating scientists and other local people working with the sloths about new anesthesia protocols that are safe and use extremely low doses. Sladky developed these new protocols based on his previous experiences working with other wildlife species. The latest protocols offer the sloths a rapid recovery time while allowing ample opportunity to collect all of the samples required for four different university-wide research projects.

Capturing the sloths also posed challenges for Blunck and Sladky. It can take nearly an hour to retrieve a sloth living up to 100 feet in a tree. A trained Costa Rican project assistant climbs the tree and carefully carries the animal down in a burlap bag, through which the veterinarians administer the anesthesia. From there, the team has a 45-minute window to collect blood, feces, hair, and stomach contents.

The blood samples Sladky and Blunck collected are currently being evaluated at the Wisconsin State Laboratory of Hygiene. “If we are able to detect pesticides or herbicides in the blood, it provides information that may significantly expand the scope of the research and offer opportunities to apply for larger grants,” says Sladky.

Blunck will continue to be involved in the project, but she’s also pursuing other endeavors. She relocated this summer to Pekin, Ill., a suburb of Peoria, for her new position in a clinic practicing small animal and shelter medicine. “This research project is the keystone of my veterinary medical school career and will follow me,” says Blunck. “In the daytime, I’ll spend my time spaying and neutering animals. But my weekends will be for the sloths.”

Jane Pruhs
When a dairy cow leaks milk, it can lead to a variety of problems, from hygiene issues to infection. The condition is usually manageable, but for a show cow like Vertigo, it’s unacceptable.

Ethan Heinzmann, genetics and dairy manager at Golden Oaks Farms in Wauconda, Ill., brought Vertigo to UW Veterinary Care after she started leaking milk from her rear left teat. She had damaged it, possibly by catching it under her hoof, sometime during her previous lactation.

“With a leak like this, the end of the teat is always open,” says Dr. Samantha Morello, clinical assistant professor of large animal surgery. “So it serves as a conduit for bacteria.”

Vertigo’s leak led to chronic, low-grade mastitis—a painful infection of the udder tissue—and sidelined her from competition because it’s considered a major flaw in a show cow. While teat sealant can be used as a temporary fix, cows often leak right through it. Permanent solutions tend to be more drastic.

“When we’ve seen damage to this area in the past, typically there’s no good fix, so we end up drying off just that quarter of the udder,” says Morello.

Under these circumstances, most cows will produce almost the same amount of milk, but Heinzmann was set on getting Vertigo back in the show ring, where she has won her class in the past.

“It was also very important to us to do what was in the best interest of keeping her healthy,” says Heinzmann.

So only a novel treatment would do.

Following a physical exam and analysis of ultrasound images, Morello discovered that the sphincter at the end of Vertigo’s teat was failing. She surmised that bulking up the tissue in that area might provide enough compression to keep it closed when not being milked. She began to investigate tissue-bulking methods used to treat other conditions in animals, and her research eventually led to the human side of medicine.

“A good friend of mine, Dr. Heidi Brown, is a urogynecologist at UW Health,” says Morello. “I thought some of the things she does for incontinent women might work in this case.”

Brown was out of the country, but she connected Morello with Dr. Dobie Giles, UW Health’s chief of female pelvic medicine and reconstructive surgery. After assessing ultrasound images and anatomical photos of the teat, he determined that Vertigo’s condition was similar to urethral sphincter failure in humans, which causes urinary incontinence. Giles posited that a treatment for that condition might help Vertigo as well.

In this procedure, Giles injects Macroplastique® around the urethra, which implants a rubber-like silicone elastomer material that bulks the tissue and creates a tighter seal.

“I tell my patients that I bulk up the inside of the urethra to make it look like Goldie Hawn’s lips, and that way it’ll work better,” says Giles.

Giles came to UW Veterinary Care to collaborate with Morello on the procedure. Using ultrasound images as a guide, they injected the tissue in three places around the end of the teat to tighten the seal.

“Immediately after surgery, she stopped leaking,” says Morello. “But the real test was when we hooked her up to the automatic milking machine, and she milked without a problem.”

“I was ecstatic,” says Giles. “I thoroughly enjoyed coming over there and helping with an animal.”

This might be the first time the procedure was conducted on a cow, according to Morello.

Vertigo stayed at UW Veterinary Care for a few days to make sure she didn’t react poorly to the Macroplastique® and to let post-operative swelling subside so they could verify that the elastomer stopped the leak rather than temporary inflammation.

Vertigo is now back at Golden Oaks Farms and doing well. According to Heinzmann, the infection has not reoccurred; and although the teat still poses challenges, he is pleased with the outcome.

“Had we not done this, she would be in much worse shape,” says Heinzmann. “We think there’s a good chance she can be competitive again this year.”

Nik Hawkins

You can read more patient success stories at www.vetmed.wisc.edu/category/success-stories. Our latest includes the story of 14-year-old Bichon Friese, Stampy, who arrived at UW Veterinary Care with a complete heart block. It nearly got the best of him, but cardiology experts at UWVC stepped in, and now it’s as if he never missed a beat.

Study Finds Possible Link between Single Protein and Canine Bone Cancer

Researchers at the UW School of Veterinary Medicine (SVM) have identified an association between the increased expression of a particular gene in tumor cells and more aggressive behavior in a form of canine bone cancer. The finding may eventually provide oncologists with another target for therapy and improve outcomes for patients with the disease.

The researchers examined six tumor cell lines generated from dogs that had undergone surgery for osteosarcoma, a common bone cancer, at UW Veterinary Care. They found that three of the cell lines were able to form tumors and three were not when transplanted into mice. Using a method called microarray analysis, they measured the expression levels of a large number of genes from those cells and found notable differences between the two groups.

“We found several hundred genes that expressed differently between the tumor-forming and non-tumor forming cell lines,” says Timothy Stein, assistant professor of oncology. “But a protein called frizzled–6 was expressed almost eight times more in the tumor-forming cells than in the non-tumor-forming cells.”

In the complicated process of gene expression, the genetic information encoded within DNA is eventually converted into RNA and proteins, which are responsible for a variety of vital cellular functions. Frizzled–6 plays a major role in Wnt signaling pathways—strings of proteins that transmit signals from the outside to the inside of a cell—by resting on the cell membrane and serving as a co-receptor, a sort of receiving dock, for glycoproteins called Wnt ligands.

Molecular connections like this activate pathways, which regulate the growth, differentiation, and migration of cells when working properly. But when pathways go awry, they may contribute to the development of tumors and tumor–initiating cells. The role of frizzled–6 in this process is not yet fully understood.

“It’s exciting because it’s kind of uncharted territory,” says Stein, who is also a member of the UW Carbone Cancer Center. “While we need more research to know for sure, it’s possible that frizzled–6 expression may be inhibiting a particular signaling pathway and contributing to the formation of tumor-initiating cells.”

According to Stein, the study is an excellent example of how UW Veterinary Care patients can contribute to a greater understanding of diseases. And while it does not represent a major breakthrough, it is still a significant finding, one that can serve as a bridge between basic and clinical research.

“I’d like to see what this means clinically,” he says. “Does frizzled–6 serve as a marker of a more aggressive disease? Will it help us improve the accuracy of our prognoses? These are the questions we want to answer.”

Stein hopes to continue this line of research in human cancer patients. Meanwhile, the lead author on this study, Lucas Rodrigues, is continuing the investigation in dogs.

“Now we want to make sure that frizzled–6 is truly what gives these cells the ability to form new tumors,” says Rodrigues, a post-doctoral fellow in Stein’s lab. “If we eliminate its expression and the cells are still able to form new tumors, then we have more questions to ask.”

While frizzled–6 may be the lone culprit, it is possible that a combination of multiple genes may lead to tumor formation, says Rodrigues.

The study, also co-authored by the SVM’s Victoria Thompson, an associate research specialist, and Katie Holmes, Class of 2014, and by Michael Newton of the Department of Biostatistics, was presented in June at the 2014 American College of Veterinary Internal Medicine Forum in Nashville, Tenn.

Nik Hawkins
home. I personally appreciate the fact that she rides her bike and is seriously doing her part for the environment.”

Lindner observed that even the extreme Wisconsin weather doesn’t deter Rogge from delivering first-rate care on time. Rogge estimates she logs about 1,500 miles per year for her clinic and about 75 percent of the time is able to pedal to her base of 500 clients. Only faraway client locations, rain, or extreme cold force her to use a car.

“T...
Google Glass Adds Extra Dimension to Veterinary Medical Education at UW

It's a wearable computer that resembles a sleek pair of eyeglasses and weighs about as much as your summer shades. Operating like a virtually hands-free smart phone, its wearers use voice commands, an optical display, and a tiny touchpad to communicate with the Internet, take photos, or record video, among many other functions.

It may seem like something plucked straight out of science fiction, but Google Glass is very real, and faculty and staff at the UW School of Veterinary Medicine are using it today.

In summer 2013, faculty looking to improve their teaching approached Tyler Gregory, the school's instructional designer, about recording first-person video of surgical procedures. In response, Gregory outfitted them with a helmet cam similar to devices that surfers and mountain bikers use to record their exploits on waves and trails.

However, the helmet cam proved to be somewhat cumbersome, so Gregory looked into other options. In fall 2013, he found the Google Glass Explorer Program, which allows a select number of individuals to use the device in a variety of scenarios before a full-scale release to the public.

“Google Glass gave us the opportunity to purchase some hardware and get it out there, and we are one of the first veterinary medical schools to be doing that,” says Gregory. “It’s exciting to take a new, hot technology and integrate it into veterinary medical education.”

Faculty are currently using Google Glass to take video and photos of various procedures for use in lectures and online learning modules, but they are looking into other ways the device can enhance veterinary care and instruction. This may include sending feeds from imaging machines and other equipment directly to the Google Glass optical display so surgeons have ready access to information without having to divert their attention away from an ongoing procedure.

“By being early adopters, we can position ourselves to be ahead of the game in 10 years rather than just catching up,” says Gregory. “The technology is very, very new, but I’m excited to see what we can do with it.”

To learn more about how faculty are using Google Glass at the UW School of Veterinary Medicine, you can view a video feature at go.wisc.edu/u83w04.

Nik Hawkins